REMARKS/ARGUMENTS

The Office Action mailed August 6, 2004 has been carefully considered. Reconsideration in view of the following remarks is respectfully requested.

Claim 24 has been amended to further particularly point out and distinctly claim subject matter regarded as the invention. Support for these changes may be found in the specification, page 14, lines 18-20, and reference numeral 66 of FIG. 6.

The 35 U.S.C. § 102 Rejection

Claims 1-5, 8-12, 21-26, 29-33, 36-40, 42 and 50-51 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by Beser[1].[2] This rejection is respectfully traversed.

According to the M.P.E.P., a claim is anticipated under 35 U.S.C. § 102(e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.[3]

Claim 1

Claim 1 recites:

A method for issuing or renewing a host address, comprising:

---

[1] U.S. Patent No. 6,189,102 to Beser.
[2] Office Action ¶ 2.
[3] Manual of Patent Examining Procedure (MPEP) § 2131. See also *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

retrieving a host identifier in a header of a data packet;

matching said host identifier with a list of host identifiers;

maintaining a state of authentication for a host if a match is found, or if not matched, maintaining a state of unauthentication for said host;

inserting a proxy address in a relay agent address field in the data packet; and

transmitting the data packet to an address allocation device to issue or renew said host address if said host is in a state of authentication.

The Examiner states:

Referring to claims 1, 8, 21, 25, 29, 36, 42, 50, 51, Beser teaches a method, an apparatus and a programmable storage device for issuing or renewing a host address, comprising:
retrieving a host identifier in a header of a data packet [see column 32 -
lines 39-67 and column 33 - lines 1-22, 'MAC address'];
matching said host identifier with a list of host identifiers (see column 32 - lines 39-67 and column 33 - lines 1-22, 'test using the authentication table'];
maintaining a state of authentication for a host if a match is found, or if not matched, maintaining a state of authentication for a host if a match is found, or if not matched, maintaining a state of unauthentication for said host [see column 33 - lines 9-33, 'registered', 'registration rejected'];
inserting a proxy address in a relay agent address field in the data packet [see column 24 - lines 10-20, 'CM 16 functions as a standard BOOTP relay agent/DHCP Proxy', lines 2944 and lines 51-63, 'if the first message field is zero, the second network device puts its own connection address into the first message field' and column 26 - lines 36-50];
and transmitting the data packet to an address allocation device to issue or renew said host address if said host is in a state of authentication (see abstract and column 29 - lines 31-48.][4]

The Applicants respectfully disagree. Contrary to the Examiner's statement, Beser does not disclose matching said host identifier with a list of host identifiers. In support of the Examiner's contention, the Examiner cites a portion of Beser that discloses determining whether a second unique identifier is equal to a first unique identifier in an authentication table.[5] The cited reference does not disclose matching said host identifier with a *list of host identifiers* as required by claim 1. The Examiner is reminded that the mere absence from a reference of an

---

[4] Office Action ¶ 4.
[5] Beser col. 33 lines 8-10, and reference numeral 400 of FIG. 21B.

explicit requirement of a claim cannot be reasonably construed as an affirmative statement that the requirement is in the reference.[6]

Also contrary to the Examiner's statement, the cited reference does not disclose maintaining a state of authentication for a host if a match is found, or if not matched, maintaining a state of unauthentication for said host. In support of the Examiner's contention, the Examiner cites the following portion of Beser:

> At step 400, a test is conducted to determine whether the second identifier is equal to the first unique identifier using the authentication table on CMTS 12. If the second identifier is equal to the first unique identifier in the authentication table, then at step 402, a second test is conducted with a second Address Resolution Protocol table on CMTS 12 to determine whether the second IP 54 address allegedly for CPE 18 is equal to the first IP 54 address for CPE 18, and whether the second MAC 44 address allegedly for CM 16 is equal to the first MAC 44 address for CM 16. If the network addresses are equal, at step 404 CPE 18 is registered on CMTS 12. In another embodiment of the present invention, the second MAC 44 address can also be allegedly for CMTS 12 or CPE 18. If the first unique identifier is not equal to the second identifier at step 400, *registration* of CPE 18 is rejected at step 406. If the first IP 54 address and the second IP 54 address are not equal or the first MAC 44 address and the second MAC 44 address are not equal at step 402, *registration* of CPE 18 is rejected at step 408. In addition, step 402 can also be conducted before step 400 without changing the functionality of method 384. In another embodiment of the present invention, step 402 (FIG. 21B) is split into two separate tests. In such an embodiment, if the first test fails, *registration* of CPE 18 is rejected without performing the second test for CM 16.[7]

Thus, the cited reference refers to rejecting a registration if either (1) a first unique identifier does not equal a second unique identifier, or (2) a first IP address and a second IP address do not match. The cited reference makes no mention of a state of *unauthentication*, or of

---

[6] *In re Evanega*, 829 F.2d 1110, 4 USPQ2d 1249 (Fed. Cir. 1987).
[7] Beser col. 33 lines 9-33. (emphasis added)

maintaining such a state if a match is not found. Nor does it disclose *maintaining* a state of

authentication for a host if a match is found as required by claim 1.

Also contrary to the Examiner's statement, the cited reference does not disclose

transmitting the data packet to an address allocation device to issue or renew said host address if

said host is in a state of authentication. In support of the Examiner's contention, the Examiner

cites the Abstract of Beser, which recites:

> A method for authentication of network devices in a data-over-cable system is provided.
> The method includes storing a network address for customer premise equipment and a
> network address for a cable modem associated with the customer premise equipment in
> an internal table on a cable modem termination system during an initialization sequence
> for the customer premise equipment. If the cable modem termination system has to re-
> boot, or has to re-establish a connection to a cable modem, the internal table is used to
> prevent the cable modem from registering "rogue" network devices associated with a
> cable modem on the cable modem termination system. The authentication method allows
> a cable modem termination system to authenticate customer premise equipment or other
> network devices associated with a cable modem using internal tables. This authentication
> helps improve the security of a data-over-cable system and makes it less vulnerable to
> attack.[8]

The Examiner also cites the following portion of Beser:

> From time-to-time, a cable modem termination system may re-boot or encounter a
> problem with a connection to a cable modem. If a cable modem termination system re-
> boots, or re-establishes a connection to a cable modem, the cable modem will re-register
> customer premise equipment and any other network devices associated with the cable
> modem. The re-registration includes sending additional registration messages to the
> cable modem termination system. In data-over-cable systems from the prior art, there is
> no process to detect or prevent a rogue cable modem from registering rogue network
> addresses with a cable modem termination system after a re-boot of the cable modem
> termination system or the re-establishment of a connection to a cable modem. Thus, data-
> over-cable systems from the prior art are vulnerable to attack by allowing a rogue cable

---

[8] Beser, Abstract.

modem to register one or more rogue network addresses for customer premise equipment or other network devices with a cable modem termination system.[9]

Thus, the cited reference discloses a particular re-*registration* method. Specifically, the cited reference discloses storing a network address for a customer premise equipment and a network address for a cable modem associated with the customer premise equipment in a internal table on a cable modem termination system during an initialization sequence for the customer premise equipment. No mention is made of transmitting the data packet to an address allocation device *to issue or renew* said host address if said host is in a state of authentication as required by claim 1.

For these reasons, the 35 U.S.C. § 102 rejection of claim 1 based on Beser is unsupported by the art and should be withdrawn.

Independent Claims 29 and 50

Claim 29 is a means-plus-function claim corresponding to method claim 1. Claim 50 is an In re Beauregard claim corresponding to method claim 1. Claim 1 being allowable, claims 29 and 50 must be allowable for at least the same reasons.

Independent Claims 8, 21, 36, and 51

Claims 8, 21, 36, and 51 include limitations substantially similar to claim 1. Claim 1 being allowable, claims 8, 21, 36, and 51 must be allowable for at least the same reasons.

---

[9] Beser col. 29 lines 31-48.

Dependent Claims 2-5, 9-12, 22-26, 30-33, 37-40, and 42

Claims 4-5 depend from claim 1. Claims 9-12 depend from claim 8. Claims 22-26

depend from claim 21. Claims 30-33 depend from claim 29. Claims 37-40 and 42 depend from

claim 36. Claims 1, 8, 21, 29, and 36 being allowable, claims 2-5, 9-12, 22-26, 30-33, 37-40,

and 42 must be allowable for at least the same reasons.

Claims 3, 10, 31, and 38

Claims 3, 10, 31, and 38 recite storing said list of host identifiers in a memory. The

Examiner states:

> Referring to claims 3, 10, 31, 38, Beser teaches further comprising storing said list of host
> identifiers in a memory [see column 32 - lines 53-57.][10]

The Applicants respectfully disagree. Contrary to the Examiner's statement, Beser does

not disclose storing said list of host identifiers in a memory. In support of the Examiner's

contention, the Examiner cites the following portion of Beser:

> At step 390, the IP 54 address and the unique identifier for CPE 18 are stored in an
> authentication table on CMTS 12.[11]

As mentioned with respect to claim 1, Beser does not disclose matching said host identifier with

a *list* of host identifiers. Thus Beser cannot be said to store said *list* of host identifiers in a

memory.

---

[10] Office Action ¶ 6.
[11] Beser col. 32 lines 53-57.

For this additional reason, the 35 U.S.C. § 102 rejection of claims 3, 10, 31, and 38 based

on <u>Beser</u> is unsupported by the art and should be withdrawn.

Claims 5, 12, 24, 33, and 40

Claims 5, 12, 24, 33, and 40 recite discarding said data packet if said host is in a state of

unauthentication. The Examiner states:

> Referring to claims 5, 12, 24, 33, 40, Beser teaches further comprising discarding said
> data packet if said host is in a state of unauthentication [see column 33 - lines 9-33,
> "registration rejected'.][12]

The Applicants respectfully disagree. Contrary to the Examiner's statement, <u>Beser</u> does

not disclose discarding said data packet if said host is in a state of unauthentication. In support

of the Examiner's contention, the Examiner cites a portion of <u>Beser</u> that disclose rejecting a

registration if two unique identifiers do not match, or if two IP addresses do not match. The

cited reference does not disclose discarding said *data packet* if said host is in a *state of*

unauthentication. As mentioned above with respect to claim 1, the cited reference does not

maintain a state of unauthentication and thus cannot disclose performing an action (i.e.

discarding a data packet) based upon a state that is not maintained (state of unauthentication).

For this additional reason, the 35 U.S.C. § 102 rejection of claims 5, 12, 24, 33, and 40

based on <u>Beser</u> is unsupported by the art and should be withdrawn.

The First 35 U.S.C. § 103 Rejection

---

[12] Office Action ¶ 8.

Claims 6, 13, 28, 34, and 41 stand rejected under 35 U.S.C. § 103(a) as being allegedly

unpatentable over Beser.[13] This rejection is respectfully traversed.

According to the Manual of Patent Examining Procedure (M.P.E.P.),

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First
> there must be some suggestion or motivation, either in the references themselves or in the
> knowledge generally available to one of ordinary skill in the art, to modify the reference
> or to combine reference teachings. Second, there must be a reasonable expectation of
> success. Finally, the prior art reference (or references when combined) must teach or
> suggest all the claim limitations. The teaching or suggestion to make the claimed
> combination and the reasonable expectation of success must both be found in the prior
> art, not in the applicant's disclosure.[14]

Specifically, the Office Action contends that the elements of the presently claimed

invention are disclosed in Beser except that Beser does not teach querying an accounting device

to obtain account information for said host.[15] The Office Action further contends:

> It would have been obvious to one of ordinary skill in the art at the time of applicant's
> invention that it was old and well known in the computer art to get the advantage of being
> able to obtain account information of a host in order to determine various types of
> services that needs to be provided to the host. It would have been obvious to one or
> ordinary skill in the art at the time of applicant's invention to include accounting device
> containing account information for the host.[16]

The Office action admits that Beser does not teach querying an accounting device to

obtain account information for said host, but does not provide a specific reference where such a

limitation is found, instead arguing that one of ordinary skill in the art would have found it

obvious to modify the invention in Beser to arrive at the additional claim limitation. Therefore,

---

[13] Office Action ¶ 11.
[14] M.P.E.P § 2143.
[15] Office Action ¶ 12.
[16] Office Action ¶ 12.

applicant assumes that the Office Action intended to take official notice of facts under M.P.E.P.

§ 2144.03 that the rationale supporting the obviousness rejection is based on common knowledge

in the art or "well-known" prior art. Under M.P.E.P. § 2144.03, "[i]f the applicant traverses such

an assertion the examiner should cite a reference in support of his or her position." The

Applicants hereby traverse the assertion and request that a reference be cited in support of the

position outlined in the Office Action.

The Second 35 U.S.C. § 103 Rejection

Claims 7, 14-19, 27, 35, 43-49, and 52 stand rejected under 35 U.S.C. § 103(a) as being

allegedly unpatentable over Beser in view of Michael[17].[18] This rejection is respectfully traversed.

Claim 7 depends from claim 1 and thus includes the limitations of claim 1. Claim 14

depends from claim 8 and thus includes the limitations of claim 8. Independent claims 15, 44,

and 52 include limitations substantially similar to independent claim 8. Claims 16-19 depend

from claim 15 and thus include the limitations of claim 15. Claims 27 and 43 depend from claim

36 and thus include the limitations of claim 36. Claim 35 depends from claim 29 and thus

includes the limitations of claim 29. Claims 45-49 depend from claim 44 and thus include the

limitations of claim 44. Thus, the arguments made above with respect to independent claims 1,

8, 21, 29, 36, 50, and 51 apply here as well. The 35 U.S.C. § 102 rejection of claims 1, 8, 21, 29,

36, 50, and 51 based on Beser is unsupported by the art, as each and every element as set forth in

claims 1, 8, 21, 29, 36, 50, and 51 is not found in Beser. Therefore, the 35 U.S.C. § 103

---

[17] Michael Patrick, "DHCP Relay Agent Information Option" Motorola ISG, July 30, 1997.
[18] Office Action ¶ 11.

rejection of claims 7, 14-19, 27, 35, 43-49, and 52 based on <u>Beser</u> in view of <u>Michael</u> is also

unsupported by the art. Thus, no prima facie case of obviousness has been established and the 35

U.S.C. § 103 rejection should be withdrawn.

<u>Claims 15, 44, and 52</u>

Claim 15 recites:

A method for issuing or renewing a host address, comprising:
retrieving a host identifier in a header of a DHCP request packet;
matching said host identifier with a list of host identifiers;
maintaining a state of authentication for a host if a match is found, or if not matched,
    maintaining a state of unauthentication for said host;
inserting a proxy address in a relay agent address field in said DHCP request packet;
flagging an option 82 option in said DHCP request packet;
transmitting said DHCP request packet to an address allocation device if said host is in a
    state of authentication;
setting said proxy address in a server identifier address field in a DHCP offer packet
    having an assigned host address, said DHCP offer packet received from said address
    allocation device in response to said DHCP request packet.

The Examiner states:

Referring to claims 15, 44, 52, a method and an apparatus for issuing or renewing a host
address, comprising: retrieving a host identifier in a header of a DHCP request packet
[see column 32 - lines 39-67 and column 33 - lines 1-22, 'MAC address']; matching said
host identifier with a list of host identifiers [see column 32 - lines 39-67 and column 33 -
lines 1-22, 'test using the authentication table']; maintaining a state of authentication for a
host if a match is found, or if not matched, maintaining a state of unauthentication for
said host [see column 33 - lines 9-33, 'registered', 'registration rejected']; inserting a proxy
address in a relay agent address field in the data packet [see column 24 - lines 10-20, 'CM
16 functions as a standard BOOTP relay agent/DHCP Proxy', lines 29¬44 and lines 51-
63, 'if the first message field is zero, the second network device puts its own connection
address into the first message field' and column 26 - lines 36-50]; transmitting the data
packet to an address allocation device if said host is in a state of authentication [see
abstract and column 29 - lines 31-48]; setting said proxy address in a server identifier
address field in a DHCP offer packet having an assigned host address, said DHCP offer
packet received from said address allocation device in response to said DHCP request
packet [see column 18 - lines 8-48]; however does not set forth the limitation of wherein
said inserting step further comprises flagging an option 82 option in said data packet.

Michael teaches a use of option 82 with DHCP protocol to prevent several security attacks on the operation of IP address assignment, including IP spoofing, Client ID spoofing, MAC address spoofing, and DHCP server address exhaustion [see Michael page 5 - paragraphs 1,2,3 and page 10 - paragraphs 2,3,4,5,6.]
One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous for the system of Beser to implement option 82 in order to prevent several security attacks on the operation of IP address assignment, including IP spoofing, Client ID spoofing, MAC address spoofing, and DHCP server address exhaustion. It is for this reason that one of ordinary skill in the art would have been motivated to use option 82 to prevent various types of security attacks on the operation of IP address assignment.[19]

The Applicants respectfully disagree. The arguments made above with respect to claim 1 apply here. Claims 15, 44, and 52 include limitations substantially similar to claim 1. Claim 1 being allowable, claims 15, 44, and 52 must be allowable for at least the same reasons.

Claims 44 and 52 include limitations substantially similar to those of claim 15 and thus should be allowable for at least the same reasons as claim 15. For this additional reason, the 35 U.S.C. § 103 rejection of claims 15, 44, and 52 based on <u>Beser</u> in view of <u>Michael</u> is unsupported by the art and should be withdrawn.

<u>Claims 17 and 46</u>

Claims 17 and 46 recite storing said list of host identifiers in a memory. The Examiner states:

Referring to claims 17, 46, Beser teaches further comprising storing said list of host identifiers in a memory (see column 32 - lines 53-57.][20]

---

[19] Office Action ¶ 15.
[20] Office Action ¶ 17.

The Applicants respectfully disagree. The arguments made above with respect to claims

3, 10, 31, and 38 apply here as well.

For this additional reason, the 35 U.S.C. § 103 rejection of claims 17 and 46 based on

Beser in view of Michael is unsupported by the art and should be withdrawn.

Claims 19 and 48

Claim 19 recites:

The method of claim 15 further comprising discarding said DHCP request data packet if said host is in a state of unauthentication.

The Examiner states:

Referring to claims 19, 48, Beser teaches further comprising discarding said data packet if said host is in a state of unauthentication [see column 33 - lines 9-33, 'registration rejected'.][21]

The Applicants respectfully disagree. The arguments made above with respect to claims

5, 12, 24, 33, and 40 apply here as well.

Claim 48 includes limitations substantially similar to those of claim 19 and thus should

be allowable for at least the same reasons as claim 19. For this additional reason, the 35 U.S.C. §

103 rejection of claims 19 and 48 based on Beser in view of Michael is unsupported by the art

and should be withdrawn.

Claim 49

---

[21] Office Action ¶ 19.

Claim 49 recites the apparatus of claim 44 further comprising means for querying an

account device to obtain account information for said host. The Examiner states:

> Referring to claims 49, Beser teaches a method for issuing or renewing a host address
> [see column 32 - lines 39-67 and column 33 - lines 1-22, 'MAC address'] however does
> not set forth the limitation of further comprising querying an accounting device to obtain
> account information for said host. It would have been obvious to one of ordinary skill in
> the art at the time of applicant's invention that it was old and well known in the computer
> art to get the advantage of being able to obtain account information of a host in order to
> determine various types of services that needs to be provided to the host. It would have
> been obvious to one or ordinary skill in the art at the time of applicant's invention to
> include accounting device containing account information for the host.[22]

The Office action admits that <u>Beser</u> does not teach querying an accounting device to

obtain account information for said host, but does not provide a specific reference where such a

limitation is found, instead arguing that one of ordinary skill in the art would have found it

obvious to modify the invention in <u>Beser</u> to arrive at the additional claim limitation. Therefore,

applicant assumes that the Office Action intended to take official notice of facts under M.P.E.P.

§ 2144.03 that the rationale supporting the obviousness rejection is based on common knowledge

in the art or "well-known" prior art. Under M.P.E.P. § 2144.03, "[i]f the applicant traverses such

an assertion the examiner should cite a reference in support of his or her position." The

Applicants hereby traverse the assertion and request that a reference be cited in support of the

position outlined in the Office Action.

For this additional reason, the 35 U.S.C. § 103 rejection of claim 49 based on <u>Beser</u> in

view of <u>Michael</u> is unsupported by the art and should be withdrawn.

---

[22] Office Action ¶ 20.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.

Respectfully submitted,

THELEN REID & PRIEST, LLP

Dated: November 8, 2004

John P. Schaub
Reg. No. 42,125

Thelen Reid & Priest LLP
P.O. Box 640640
San Jose, CA 95164-0640
Tel. (408) 292-5800
Fax. (408) 287-8040